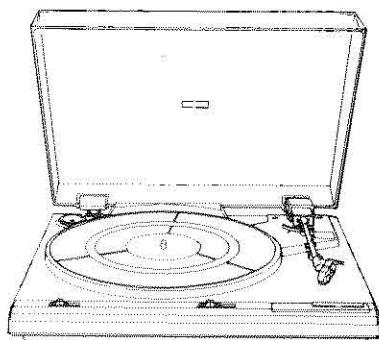


Operating Instructions

STEREO TURNTABLE

PL-470



Thank you for buying this Pioneer product.

Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

"This product is manufactured to comply with the radio interference requirements of EEC Directive 76/889/EEC and 82/499/EEC."

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch.

The line voltage selector switch is located on the top of the cabinet of this turntable. Before your turntable is shipped from the factory, the switch is set to the power requirements of the turntable's destination. Check that it is set properly before plugging the power cord into the outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows:

- Use a medium-sized screwdriver. Insert the tip of the screwdriver into the groove of the selector switch and turn it so that the power voltage marking of your area points to the arrow.



 **PIONEER®**

SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzene, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

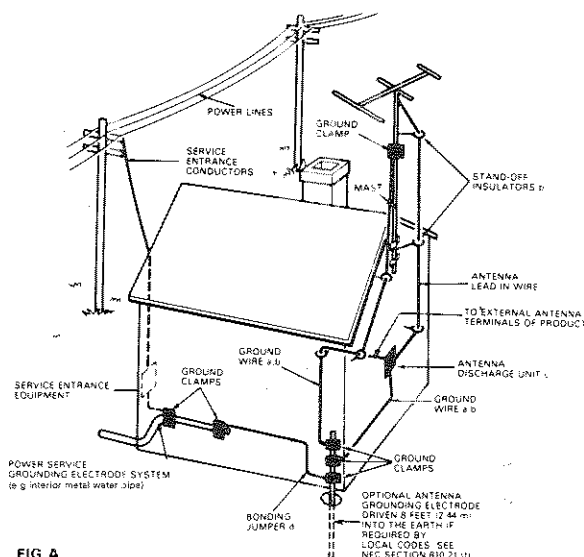


FIG. A

- Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper clad steel, bronze wire, or larger as ground wire.
- Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
- Mount antenna discharge unit as closely as possible to where lead-in enters house.
- Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper or equivalent when separate antenna-grounding electrode is used.

IMPORTANT 1



The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



CAUTION
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

The power switch is secondary connected and therefore does not separate the unit from mains power in STAND-BY (tone arm on the rest) position.

FOR USE IN THE UNITED KINGDOM

WARNING: This plug must only be connected to electronic apparatus equipped with suitable sockets.

If not, cut off the plug and fit an appropriate type in accordance with the instructions below.

The cut-off plug must be disposed of as an electrical shock hazard could exist if connected to a socket outlet.

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CONTENTS

Features	3	How to Play Records.....	8
Cautions regarding handling.....	3	Maintenance	9
Before Operating Turntable	4	Troubleshooting	10
Connections	6	Specifications	12
Names and Use of Parts	7		

FEATURES

A auto-return turntable with excellent cost performance.

Axle with high performance DC servo motor and SH rotor, giving S/N ratio of 68 dB, and flutter of 0.07% (DIN).

Easy cartridge replacement with the  plug-in cartridge.

CAUTIONS REGARDING HANDLING

LOCATION

Install turntable in a well ventilated location where it will not be exposed to high temperature or humidity. Do not install the turntable in a location which is exposed to the direct rays of the sun, or near to stoves or radiators. Excessive heat can adversely affect the cabinet and internal components. Also, installation of the turntable in a damp or dusty environment, may result in malfunction or accident. (Also avoid installation near cookers etc., where the turntable may be exposed to smoke from oil, steam or heat.)

PRECAUTIONS REGARDING INSTALLATION

Install this turntable as far as possible from tuners and TV sets. A turntable installed in close proximity to such equipment, may cause noise or degradation of the picture. Such noise may be particularly noticeable when an indoor antenna is used. In such a case, make use of an outdoor antenna, or turn off power to the turntable.

CONDENSATION

When the turntable is brought into a warm room from previously cold surroundings or when the room temperature is suddenly increased, condensation may form inside and the turntable may not be able to attain its full performance. In cases like this, use the turntable after allowing it to stand for about an hour or after raising the room temperature gradually.

CARE OF RECORDS

■ Use good quality cleaner.

If use is made of a dry type cleaner (velvet or nylon brush etc.), this can result in records becoming charged with static electricity which can result in occurrence of noise. We recommend the use of damp type cleaners and anti-static sprays which also effectively remove dust.

REPLACING THE STYLUS

- The life of the stylus which comes with the supplied cartridge is 800 to 1,000 hours.

(As a rough guide, if the turntable is used for 1 to 2 hours every day, the stylus should last 1 to 2 years.) If the life of the stylus is exceeded, or use is made of a damaged stylus, the record may be damaged, and the playback sound may be distorted. Please take care to replace the stylus ahead of time.

- For the replacement stylus, make sure to purchase and use a Pioneer PN-295T.

The cartridge installed in the turntable, is a unit which was developed by Pioneer. For this reason, use can only be made of the special replacement stylus, so please purchase the required stylus from a shop dealing in Pioneer products.

- For the replacement stylus, make sure that you use a stylus that is a genuine Pioneer product.

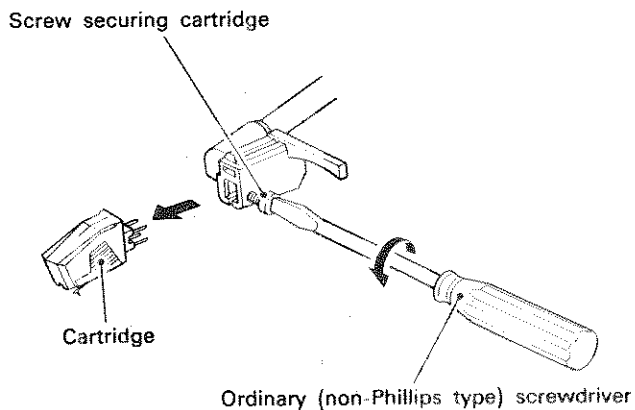
If you use a replacement stylus that is manufactured by any other company, there can be no guarantee with respect to degradation of performance or breakdown, so please make sure to use the specified Pioneer stylus.

Genuine Pioneer styluses are marked with the  PIONEER mark, so please make sure that this mark is present.

CARTRIDGE REPLACEMENT

The  mark is a standard mark indicating a plug-in connector type unit. Products with this mark are mutually compatible and can be used for the same applications.

After removing the screw securing the old cartridge, replace it with the new cartridge, and secure the new cartridge in place with the screw.



BEFORE OPERATING TURNTABLE

CONFIRM SUPPLIED ACCESSORIES.



Platter mat



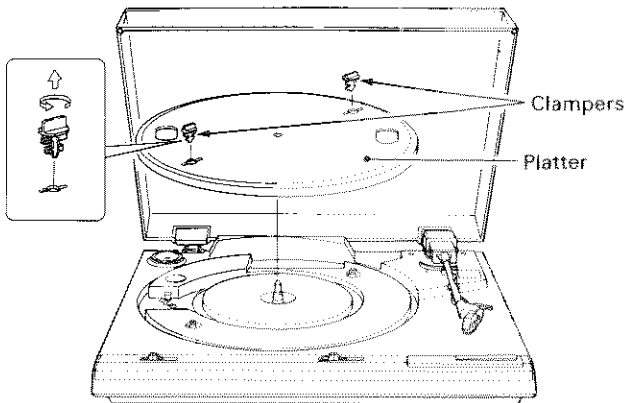
EP adaptor

(The EP adaptor is fastened on top of the platter.)

ASSEMBLE THE UNIT

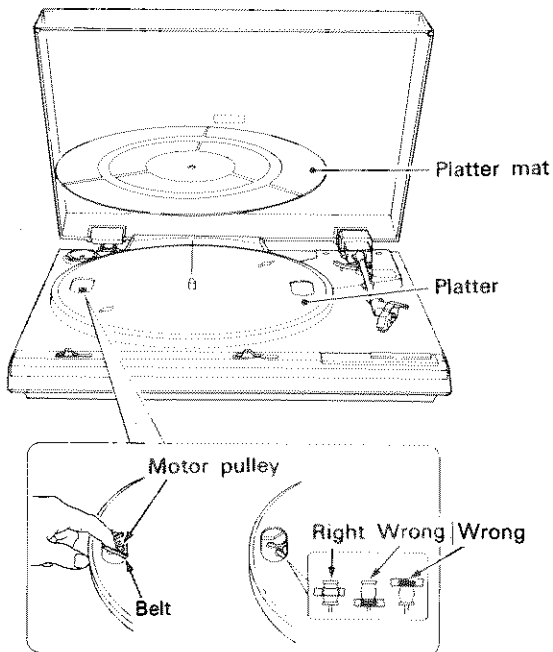
- 1 After removing the clampers (x2), remove the platter.**

Turn the clampers in the direction indicated by the arrow in the diagram, and then remove upward.

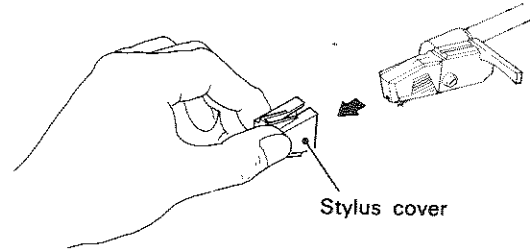


- 2 Install the platter and the platter mat.**

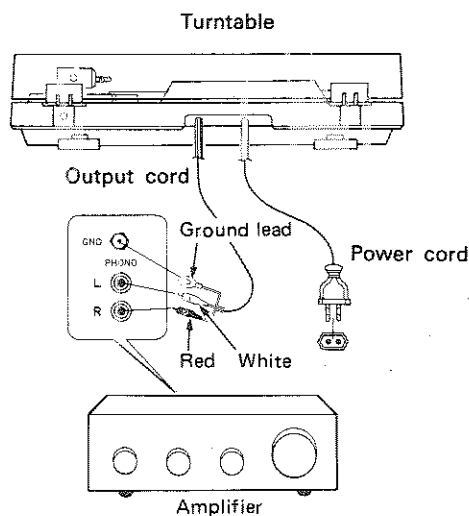
- ① Place the platter over the platter spindle. While doing this, hook the belt attached to the inner side of the platter over the pulley of the motor. (Make sure to do this correctly as shown in the diagram.)
- ② Place the platter mat onto the platter.



- 3 Remove the plastic band securing the tone arm.**
- 4 Remove the stylus cover.**

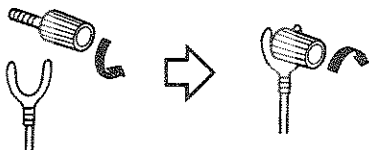


CONNECTIONS



Connect the Ground Lead

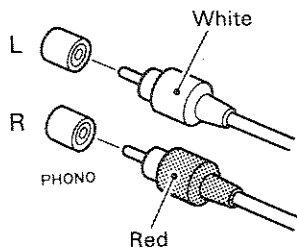
Attach the metal fitting to the amplifier ground terminal (GND).



Connect the Output Cords

Connect the plugs of the cords to the input terminals of the amplifier. (Always connect to the MM terminals.)

- Connect the white plug to the left (L) channel and the red plug to the right (R) channel.
- Make sure plugs are pushed fully into the terminals.



Connect the Power Cord

Insert the power cord plug into the auxiliary power outlet (AC OUTLET) of your amplifier unit, or into a household wall outlet.

AFTER COMPLETING, READ THE FOLLOWING ITEMS AND CONFIRM THAT YOU HAVE DONE EVERYTHING CORRECTLY.

■ Wrong connections and placement can result in malfunction.

- If connections are made incorrectly, this can result in "no sound output". Also, if the plugs of the output leads are not fully inserted or ground leads are not properly connected, this can result in "hum noise" (emission of a humming or buzzing sound from the speakers).
- If the turntable is tilted, this can result in the symptoms "sound is distorted", and "tone arm slides across the record". If vibration is conducted to the turntable, this can result in the symptoms "stylus jumps", "sound is unstable", and "howling" (howling or thumping sounds produced by the speaker).

■ Always connect to the amplifier input terminals for MM use (PHONO MM terminals).

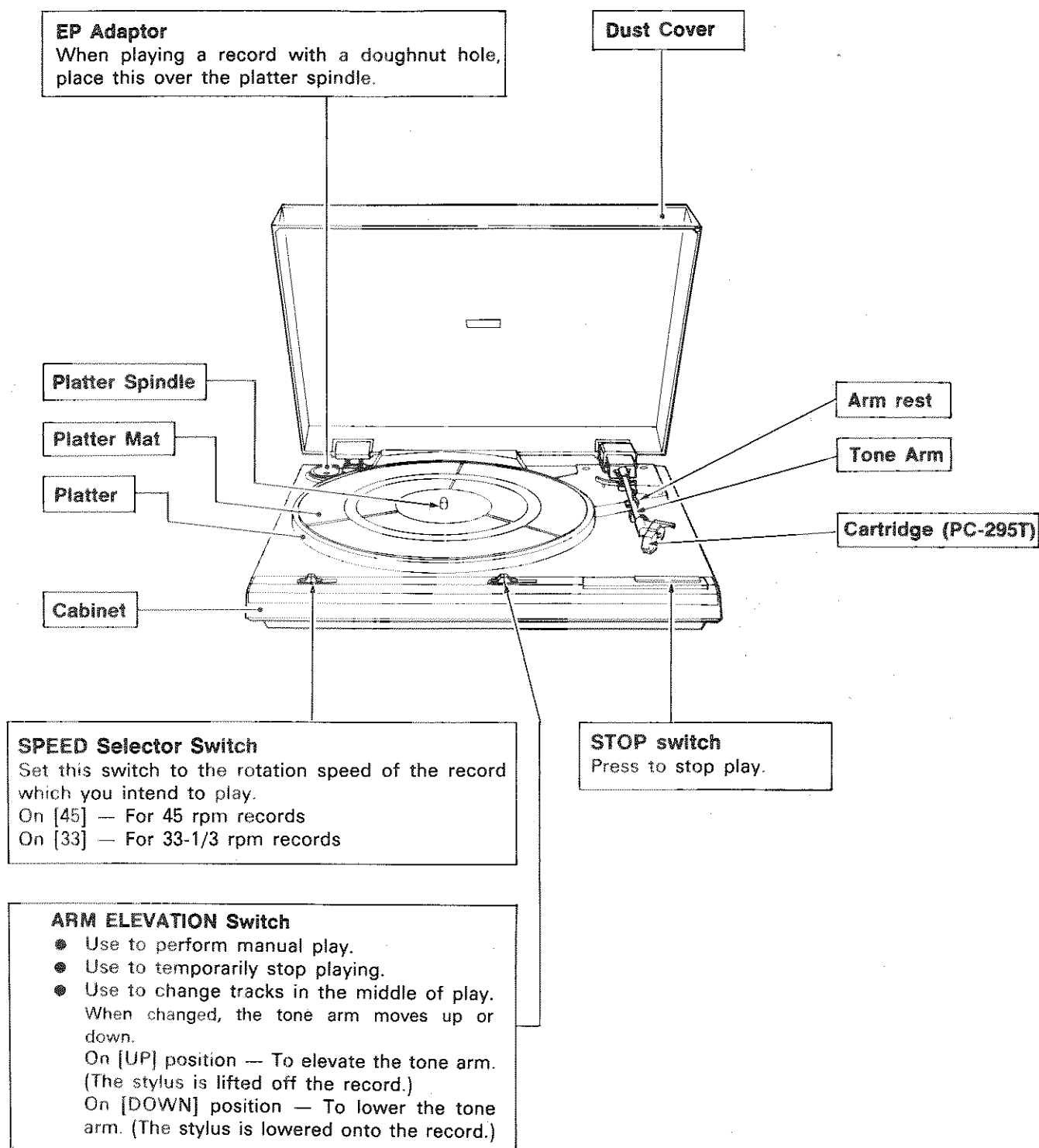
■ Allow connecting leads to be slack.

After making connections, make sure that connecting leads are not pulled tight. If leads are tight this can result in breakage of leads and howling.

■ The supplied cartridge matches a load resistance of 50 kΩ.

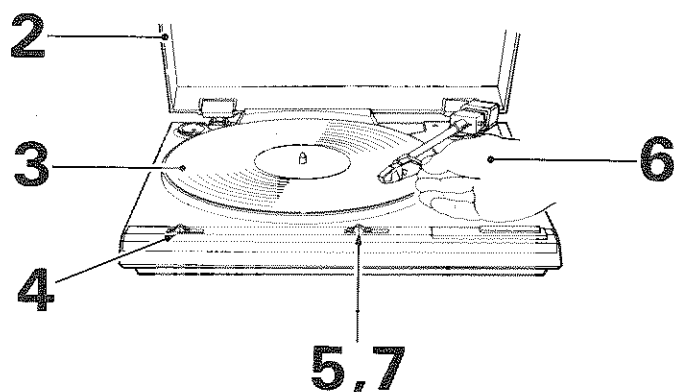
If your stereo amplifier has a cartridge load resistance selector switch, please set it to the above value.

NAMES AND USE OF PARTS



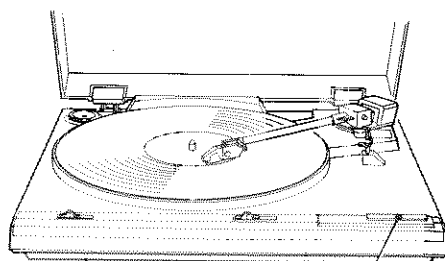
HOW TO PLAY RECORDS

PLAY PROCEDURES



- 1 **Set your stereo amplifier for playing a record.**
For details refer to the operating instructions for your stereo amplifier.
- 2 **Open the dust cover.**
- 3 **Place a record on the platter.**
- 4 **Set the SPEED selector switch [45 or 33 rpm].**
- 5 **Elevate the tone arm with the ARM ELEVATION switch at [UP] position.**
- 6 **Move the tone arm over the record track to be played.**
- 7 **Lower the tone arm with the ARM ELEVATION switch at [DOWN] position.**
- 8 **Adjust the volume and tone controls of the stereo amplifier.**
(After the last track has been played, the tone arm will return automatically.)

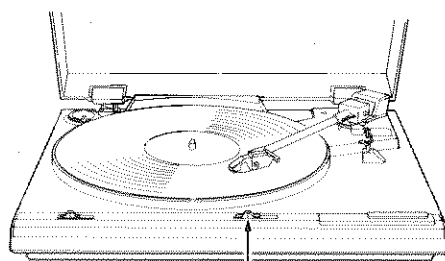
OPERATIONS TO STOP PLAYING



Press the STOP switch.

Several seconds after pressing the switch, the tone arm will automatically return, and the platter will stop rotating.

OPERATIONS TO TEMPORARILY INTERRUPT PLAYING



1, 2

- 1 Set the ARM ELEVATION switch to [UP] position.**
This will cause the stylus to be lifted off the record, and playing will be interrupted (the platter will continue rotating).

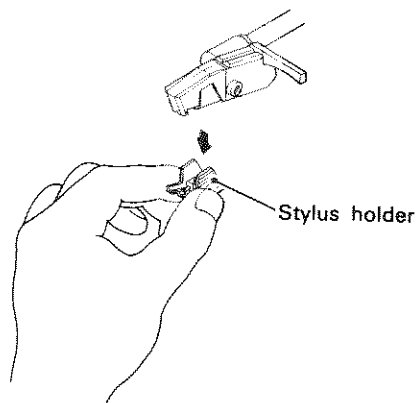
- 2 To resume playing, set the ARM ELEVATION switch to [DOWN] position.**
The stylus will be lowered onto the record, and playing will be resumed.

MAINTENANCE

STYLUS REPLACEMENT PROCEDURE

Please carry out these operations after setting the stereo amplifier to minimum volume.

- 1 Remove the stylus from the cartridge.**
Grip the stylus holder, and carefully pull in the direction of the arrow.

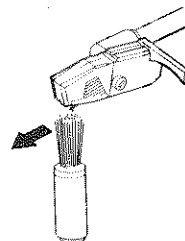


- 2 Install a new stylus holder (replacement stylus) into the cartridge.**

CARE OF THE STYLUS

■ Use a soft brush

Remove dust and lint from the point of the stylus by moving the brush in the forward direction. Attempting to remove dust with fingers may result in damage.



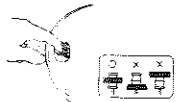
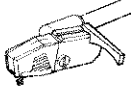
■ When dirt cannot be removed with a brush

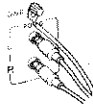
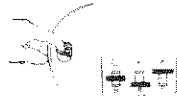
When dirt cannot be removed with a brush, remove it with a commercially available stylus cleaner etc. Spillage of the cleaning fluid onto plastic parts or onto the rubber of the stylus damper, may soften or dissolve these parts and result in degradation of performance, so please use the cleaning fluid with care.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.

If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Probable Cause	Remedy
Platter does not rotate.	• Power plug is disconnected from outlet. • The turntable is plugged into an auxiliary power outlet operated by the power switch of the stereo amplifier (SWITCHED outlet), and the power switch of the stereo amplifier is turned OFF. • The platter belt has come off, or is not hooked over the motor pulley. 	• Insert plug into stereo amplifier or wall outlet. • Turn on the power switch of the stereo amplifier. • Correctly hook the belt over the platter and motor pulley. 
No sound	• Output cords are not connected properly. • Cartridge and/or stylus are not installed properly.  • Incorrect operation of stereo amplifier.	• Make proper connections between the turntable and stereo amplifier. • Properly install the cartridge and stylus. • Check the settings of the amplifier switches. 
Noise and scratch sounds are produced. (Clicking sounds etc. are produced.) Sound jumps, sound is distorted.	• The record has dust and dirt on its surface. • The record is warped or scratched. • Output lead pin plugs and/or stereo amplifier input terminals are dirty. • Dust or dirt on the point of the cartridge stylus. • The point of the cartridge stylus is worn.   	• Clean the record with cleaner etc. • Replace the record. • Clean away dirt. • Clean the point of the stylus with a brush. • Replace the stylus.   
Howling occurs (When the volume is increased when a record is being played, a howling sound is produced by the speaker system.)	• Vibrations from the speaker system are being conducted from the floor to the record and cartridge. • Sound waves from the speaker system are being transmitted directly to the cartridge.	• Move the turntable further away from the speaker system. • Place the turntable on a firm foundation etc. • Change the place of installation of the turntable.

Symptom	Probable Cause	Remedy
Hum noise (A humming or buzzing noise is produced by the speaker system.)	• Output leads and/or ground leads are not making proper contact.  • Cartridge and/or stylus are not properly installed. • Interference is being picked up from leakage of magnetic flux from stereo amplifier power transformer etc., or from a TV set.	• Make proper connections between the turntable and stereo amplifier.  • Properly install the cartridge and stylus. • Try changing the places of installation of the stereo amplifier, TV set or turntable
Abnormal sound tempo	• The setting of the speed selector switch does not match the record speed.  • The belt is not hooked in the correct position. 	• Set the switch to the position which matches the record speed (33 or 45).  • Hook the belt correctly. 

SPECIFICATIONS

PHONOGRAPH MOTOR AND PLATTER

Motor type.....DC servo motor
Drive system.....Belt drive system
Speed of rotation.....2 speeds: 33-1/3, 45 rpm
Wow and Flutter.....0.05% WRMS
 ±0.07% WTD Peak (DIN)
S/N ratio.....68 dB (DIN-B)
Platter.....Diameter 304 mm,
 aluminium die-cast

TONE ARM

Type.....Integrated straight pipe arm

SUPPLIED CARTRIDGE (PC-295T)

Type	MM type
Replacement stylus	PN-295T
Stylus	0.6 mil diamond
Output voltage	2.5 mV (1 kHz, 5 cm/s LAT Peak)
Suitable stylus pressure	1 - 1.5 g (optimum value 1.25 g)
Frequency response	10 Hz - 30,000 Hz
Load resistance	50 k Ω
Weight	.6 g

FUNCTIONS PROVIDED

Auto return, auto cut, arm elevation.

POWER SUPPLY, OTHER

Power requirements

European, U.K., Australian
models AC 220 V — 240 V ~ ,50/60 Hz
U.S., Canadian models.....AC 120 V, 60 Hz
Other destination
models AC 110 V — 120 V/220 V — 240 V ~
(switchable) 50/60 Hz

Power consumption

European, U.K., Australian models	2 W
U.S., Canadian models	2 W
Other destination models	2 W

External dimensions

420(W) x 99(H) x 374(D) mm

16 - 1/2(W) x 3-1/8(H) x 14-3/4(D) in

Net weight 3.9 kg (8 lb 10 oz)

SUPPLIED ACCESSORIES

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EP adaptor.....1
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Operating instructions 1

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

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